Findings that shed new light on the possible pathogenesis of a disease or an adverse effect

Ruptured aortic dissection presenting with new onset atrial fibrillation

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Summary

We report this type A aortic dissection in both ascending and descending thoracic aorta presenting with new onset atrial fibrillation. CT images confirmed the final diagnosis. The mechanism may be due to compression of the left atrium by a large haematoma.

BACKGROUND

The classic symptoms of aortic dissection are sudden severe chest, back and abdominal pain characterised as ripping or tearing in nature. To our knowledge, there are only three case reports linking aortic dissection and new onset atrial fibrillation in the literature. Furthermore, none of them demonstrated definite diagnostic image and indicated possible mechanism.

CASE PRESENTATION

The classic symptoms of aortic dissection are sudden severe chest, back and abdominal pain characterised as ripping or tearing in nature. However, up to one-third of patients present atypically. Angiography is the standard diagnostic tool for aortic dissection. Recently, this has been supplanted by transoesophageal echocardiography, CT and MRI.¹

To our knowledge, there are only three case reports linking aortic dissection and new onset atrial fibrillation in the literature.^{2–4} Furthermore, none of them demonstrated definitely diagnostic image and indicated possible mechanism. We reported this type A aortic dissection in both ascending and descending thoracic aorta presenting with new onset atrial fibrillation. CT images confirmed the final diagnosis. The mechanism may be due to compression of the left atrium (LA) by a large haematoma.

A 85-year-old ambulatory woman presented a case of hypertension and an earlier stroke with regular medical attention. She was brought to the emergency department of our hospital due to acute onset of dyspnoea. An ECG showed rapid atrial fibrillation (figure 1A). Chest radiograph showed cardiomegaly, widened mediastinum and blunting of left costophrenic angle (figure 1B). Intubation and ventilator support were performed for respiratory

failure. At 1 h later, her blood pressure dropped from 146/123 to 75/34 mm Hg and poor response to treatment. Further, ECG showed left ventricular hypertrophy, small amount of pericardial effusion, left pleural effusion with compression of the LA (figure 1C). Emergent CT scan of the chest revealed aortic dissection in both the ascending and descending thoracic aorta, aortic rupture in descending thoracic aorta (arrow) with large haematoma compressing the LA and pericardial effusion (figure 1D). Stent graft of descending thoracic aorta and repair of ascending aorta were suggested by a cardiovascular surgeon. However, her family refused surgery and the patient died.

This case emphasises that physicians should bear in mind the occurrence of aortic dissection in patients with atypical clinical presentation. New onset atrial fibrillation may be related to aortic lesion and deserves a comprehensive examination. Non-invasive CT image is a useful tool to confirm the diagnosis.

Learning points

- Physicians should relate aortic dissection in patients with atypical clinical presentation.
- New onset atrial fibrillation may be related to aortic lesion and deserves a comprehensive examination.
- Non-invasive CT image is a useful tool to confirm the diagnosis.

Competing interests None.

Patient consent Obtained.

Figure 1 (A) ECG showed atrial fibrillation with rapid ventricular response, right axis deviation, incomplete right bundle branch block, left posterior hemiblock and non-specific ST-T change. (B) Chest radiograph (antero-posterior view) showed cardiomegaly, widened mediastinum and blunting of the left costophrenic angle. (C) ECG showed left ventricular hypertrophy, small amount of pericardial effusion and left pleural effusion with compression of the left atrium. (D) CT of the chest revealed aortic dissection in both ascending and descending thoracic aorta, aortic rupture in descending thoracic aorta (arrow) with large haematoma compressing the left atrium and pericardial effusion.

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